

In item 2 on pages 2-4 of the above-mentioned Office action, claims 1-5 have been rejected as being unpatentable over Lim et al. (US Pat. No. 5,773,878) in view of Inaba (US Pat. No. 4,258,381) under 35 U.S.C. § 103(a).

As will be explained below, it is believed that the claims were patentable over the cited art in their original form and the claims have, therefore, not been amended to overcome the references.

Before discussing the prior art in detail, it is believed that a brief review of the invention as claimed, would be helpful.

Claim 1 calls for:

An electronic component, comprising:

a housing made of a casting or a molding compound;

an integrated circuit having a base area; and

a lead frame having an island with a base area supporting said integrated circuit, a ratio between the base area of said integrated circuit and the base area of said island being from 0.7 to 0.9 for avoiding flexure of said housing;

said integrated circuit and said island embedded in said housing so that a thickness of a housing region above said integrated circuit is substantially equal to a thickness of a housing region below said island.

Lim et al. disclose a lead frame for IC packaging to reduce chip stress and deformation and to improve mold filling. As

shown in Figs. 4A and 4B, the vertical position of the chips is relevant to whether or not a deformation will occur. As shown in Fig. 5, this kind of deformation should be reduced by the structure of the die-pad.

In contrast, according to the invention of the instant application, the ratio between the surface of the integrated circuit and the surface of the island (die pad) is in the range of between 0.7 to 0.9, in order to avoid the housing deformation.

Lim et al. do not disclose that the ratio between the surface of the integrated circuit and the surface of the island can be responsible for a housing deformation.

When the ratio is not directly described in a patent document, it is generally recognized that the drawings in the patent document only represent the principle of the invention, and are not a true-to-scale representation. When the reference does not disclose that the drawings are to scale and is silent as to dimensions, arguments based on measurement of the drawing features are of little value. In re Wright, 569 F.2d 1124, 193 USPQ 332 (CCPA 1977).

Although the Examiner has measured the ratio between the length/vertical dimension of the IC and the island (die pad)

as being 0.75 from Fig. 2 of Lim et al., this does not mean that Lim et al. disclose the ratio between the surface of the integrated circuit and the surface of the island as being 0.75. That is because this ratio or the dimensions of the IC and the island are not mentioned anywhere in the specification of Lim et al.

In Inaba, a ratio of about 0.973 can be calculated according to the information on the dimensions (see column 4, lines 45-58). In contrast, according to the invention of the instant application, the ratio between the surface of the integrated circuit and the surface of the island (die pad) is in the range of between 0.7 to 0.9, as recited in claim 1. Clearly, the ratio 0.973 is not within the range of 0.7 - 0.9.

A person skilled in the art cannot simply change the ratio disclosed by Inaba to reach the range as disclosed by the invention of the instant application without any inventive activities (such as purposed research). That is because there is no hint in Inaba that the ratio may be changed to avoid housing deformation, which is the object of the invention of the instant application.

It is well-established in patent law that the discovery of a problem is an important part of invention. See Easco, Inc. v. Mossinghoff, 226 USPQ 133,136 (D.D.C. 1983). The prior art

did not recognize that the ratio mentioned above affects housing deformation. Applicants first made the discovery.

Clearly, none of the cited references shows "a ratio between the base area of said integrated circuit and the base area of said island being from 0.7 to 0.9 for avoiding flexure of said housing", as recited in claim 1 of the instant application.

It is accordingly believed to be clear that none of the references, whether taken alone or in any combination, either show or suggest the features of claim 1. Claim 1 is, therefore, believed to be patentable over the art and since claims 2-5 are dependent on claim 1, they are believed to be patentable as well.

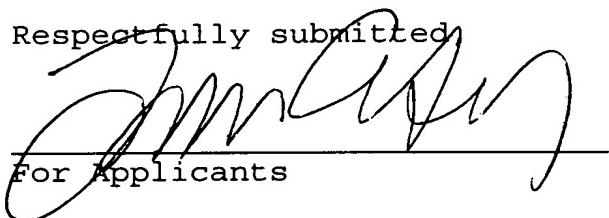
In view of the foregoing, reconsideration and allowance of claims 1-5 are solicited.

In the event the Examiner should still find any of the claims to be unpatentable, counsel would appreciate a telephone call so that, if possible, patentable language can be worked out.

Please charge any fees which might be due with respect to Sections 1.16 and 1.17 to the Deposit Account of Lerner and

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Respectfully submitted


For Applicants

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